

any indication of such a growth of altruism that the placing out scheme will be feasible in the near future.

The self-supporting colony idea needs to be explained. If one means by this that it is possible to train a group of boys in handicraft or soil tillage and organize of them a self-supporting institution, there is no reason why such a scheme could not be made to work if the boys all belonged to the high grade moron group. One can imagine that there might be local conditions that might justify such an organization, but this is not meeting the great problem of the feeble-minded. The moron group is the smallest by far in the present population of institutions for defectives and their productive industry in the general village community does them the same credit there that it would anywhere else, without the necessity of duplicating the organization. Individually they are of more importance in the village community than in general society. In the former they find higher grade employment such as printing and mechanical construction and their services there are needed.

In the general population, morons probably constitute the largest group of mental defectives—though many of them are not generally recognized as such. It is this fact that suggests the organization of special industrial communities for the higher mental grades. Whether justified in any given community or not would depend upon the facts in that case, but the larger problem should not be lost sight of.

The essential thing, of course, is to recognize the limitations as well as the possibilities and to meet the conditions in a broad and comprehensive manner.

A. C. Rogers.

REVIEWS AND NOTICES

Experimental Studies of Mental Deficiency. A Critique of the Binet-Simon Tests and a Contribution to the Psychology of Epilepsy.
J. E. WALLACE WALLIN, Ph. D., Baltimore: Warwick and York, Inc., 1912, Pp. VII-155. Price, \$1.25.

This monograph reports the results of examining 333 epileptics of the Skillman, New Jersey, institution with the 1908 series of the Binet-Simon tests, together with those of several other tests used at the same time. A final chapter gives a statement of the tests to serve as a practical guide in their

administration, more fully standardizing modes of procedure and of interpreting responses than is given in the original account of Binet and Simon.

The first chapter presents the data on a distribution curve giving the number of cases that fall under each of the mental ages of the Binet-Simon scale. This curve is compared with the similar curve for 378 feeble-minded at Vineland, New Jersey. The comparison shows that the greater number of the feeble-minded are of the imbecile grade while the greater number of the epileptic are of the moron grade; that while the curve for the former is fairly regular that for the epileptic is markedly skewed, showing a drop in the number of cases mentally five, and a still greater drop for the number of cases mentally nine. The larger part of the monograph is devoted to a minute analysis of the results in discussion of this skewed character of the curve, since this might indicate defects in the system of tests or in the manner of their use. Two possible reasons are given for the relatively greater number of morons with the epileptics as compared with the feeble-minded. (1) The epileptics were chronologically older than the feeble-minded at Vineland, and because of some chronological age influence in the tests the epileptics would tend to grade higher than the feeble-minded. (2) The epileptics at the Skillman institution may not have been representative, some selective process having operated tending to admit a relatively greater number of morons. But even with these possibilities taken into account, the author concludes that the epileptic are of a higher grade mentally than are the feeble-minded. This conclusion, although possibly quite correct, does not seem to me to follow from the data given by the author. There are undoubtedly many more morons with the feeble-minded than of the other grades, just as with the epileptics. This follows from the supposition that the smaller deviations from any normal will occur more frequently than the larger deviations. The fact that the number belonging to the different grades of feeble-minded does not give us the normal distribution curve to be expected rather indicates that some selective process has been operative here also in the admission of cases. This comes about through the fact that the average layman sees the need of admitting a case to an institution the less the more nearly normal a case is. In the case of the epileptic, however, the epilepsy is an additional reason for sending a case to a special institution for care and treatment, and this reason applies equally to all grades of mentality of the epileptic. Hence there are more moron epileptic in the institutions, admitted for their epilepsy, because there are more moron epileptic in society, but there are not more morons, admitted for their feeble-mindedness, in the special institutions.

Several possible reasons are first given for the skewed character of the distribution curve. The factors responsible for it "may reside in the method of giving the tests, in the method of scoring, in the defective nature or arrangement of the tests themselves, in the peculiar mental organization of the epileptic, or in the averaging of the results for both defective children and defective adults." The detailed analysis of the results following, including

ever thirty tables and curves, attempts to decide which is the case. First, the question of scoring. One of several methods of scoring may be used. If a child, for example, passes all tests up to and including age V, fails in some for VI, VII, VIII, and IX, but passes all in X and a few beyond X, we, may (A) give him a mental age of five plus advance credits for all tests passed beyond this, or (B) we may give him a mental age of ten plus advance credit for tests passed beyond X, or (C) we may give him a mental age obtained by averaging the two ages for the "A" and "B" methods. Dr. Wallin attributes the "B" method to Binet and Simon, and also to Goddard at Vineland. In individual cases the mental age may vary over two years with these three methods of scoring. He concludes from his analysis that his method of scoring, the "B" method, may partly account for the skewed character of the epileptic curve, but that it may "probably be neglected, more particularly because it has conformed with the prevailing usage, thus rendering the results comparable with the findings of other investigators." Likewise, it is concluded that his procedure of testing each child with a wider range of the scale than seems to have been done at Vineland can only in a small measure be responsible for the skewed curve. The relative degree of difficulty of the different individual tests is next determined by finding the percentage of the number of epileptics that pass each test. From this analysis he finds an "amazing lack of uniformity between the difficulty of the tests of the same age-norms for fully half of the ages of the scale—amazing from the standpoint of precision demanded by the standards of scientific work," and that his analysis "has demonstrated that there is a greater discrepancy in the B.-S. 1908 scale than has hitherto been conceded or suspected." The individual tests that are too difficult or too easy are indicated and the results compared with those of some other investigators. As to how much of this lack of uniformity shown in the tests from results with the epileptic is due to defects in the system of tests and how much is due to peculiarities of the epileptic mind cannot be ascertained with certainty. But it is noted from the results themselves that the epileptic "suffer from a fundamental impairment of memory," that they are markedly retarded in the rational functions, and show a "pronounced retardation of rate in the stream of thought and of motor response."

The value of the scale is next tested by plotting age-curves for the individual mental traits tested in the scale, and for a few special tests. In this the course of improvement is followed out for a given test through the different mental ages from lower to higher. The tests chosen are, (1) time needed to name four colors; (2) time needed to read a passage; (3) time needed to place blocks in a form board; (4) number of words given in three minutes; (5) strength of hand grasp; (6) ataxiagraphic sway. The effect of chronological age and sex is considered in each of these tests. The scale of tests fares better in this analysis than in that of the preceding chapter. For it is concluded that, "While it does not scale different grades of intelligence with the degree of accuracy which would be desired, it does enable us to grade and

classify defective individuals far more rapidly and satisfactorily than would be possible by the ordinary methods of observation," and "Whatever its imperfections, it affords a practical, easily administered, objective, systematic method of grading defective children which approximately locates the mental station of the individual." Some chronological age, maturity influence is found in most of the tests just named, but it is not considered so large as to invalidate the use of the scale for both children and adults. Likewise, certain sex influences are found, but the question as to whether we shall need two different scales for the two sexes is left an open one. The chapter closes with a strong note of warning against the use of the tests by unskilled examiners, and that in any case the results of the Binet-Simon tests, or of "any other graded scale of intelligence" are to be used merely for a preliminary, rough, rating of a child's intelligence, and that there remains "the more difficult task of making a detailed, expert diagnosis for each case and a diagnosis of each fundamental trait or capacity."

The fourth and closing chapter gives a statement of the 1908 series of the tests, to which are added more detailed directions as to how each is to be given and used. Greater uniformity in procedure is strongly urged, which requires more specific directions than Binet and Simon have given. The author thinks it advisable to gather more data than we as yet possess, following a standardized procedure, before revisions are made in the scale.

The monograph is an example of a keen and exhausting analysis of the data gathered, and in this method of treating the data lies its chief value rather than in the conclusions that one may obviously draw from them. In the reviewer's opinion, the epileptic mind is, in the first place, too different from that of the typically feeble-minded to make the results of the Binet-Simon tests with the epileptic of any great value in determining the accuracy of the scale in measuring general intelligence. In the second place, the 333 epileptics examined are not a sufficient number to do justice to the splendid method of analysis used. The several classifications into children and adults, males and females for each of the mental ages, for example, very frequently leaves only one to several cases under a given heading from which to compute averages, percentages and mean variations. Many of the conclusions drawn from the statistical analysis suffer from lack of sufficient numbers. These two facts combined have made the task of accounting for the skewed character of the distribution curve for the epileptic a difficult one, and, in the reviewer's mind, it has not been satisfactorily accomplished. Moreover, since the same curve for the feeble-minded and for normal children as well has not shown such skewed character, the presumption is that Dr. Wallin's results with the epileptic must be due to other factors than the defects in the scale of tests. Two other matters may be mentioned. The author, as was noted above, attributes the "B" method of scoring the mental age to Binet and Simon, and also to Goddard, and regards it as the one generally used. I have myself always used the "A" method and regard it as quite the fairest of the three. The author is in error, I believe, in attributing the "B"

method to Goddard. Binet and Simon's rule, if taken literally, indicates the "B" method, but it may be interpreted as leaving out of account the irregular and more or less unusual result in which a child passes all tests of a higher age-group and fails in several of a lower age group. This seems to me the proper interpretation, and, if made, the rule gives the "A" method of scoring. Since the mental age of a child may vary over a range of over two years according to the method of scoring followed the point is seen to be of considerable importance for the cases that give irregular results on the tests they fail in and pass. The second matter concerns the advisability of continuing with the 1908 scale under more standardized conditions before making any revisions in it. The reviewer is entire!}" in harmony with the author's strong plea that the scale should be better standardized with reference to modes of procedure with the individual tests. But such standardization is not incompatible with a number of revisions and adaptations to American conditions which results up to date fully justify and demand. The American revisions published may have introduced new errors, but no one who has followed the history of the tests can claim that Dr. Goddard's revision, for example, has not materially improved the accuracy of the scale on the whole. The reviewer, further, cannot refrain from noting that while the author dates his preface "February, 1912," the book did not come to the reviewer's hands from the publishers until January, 1913. As a guide to the present status of the Binet-Simon tests it is already quite out of date which is at once obvious from the absence of references to much important literature that has appeared since the date of the preface.

Faribault, Minnesota.

F. KUHLMANN

Health and Medical Inspection of School Children. WALTER S. CORNELL, M. D., Philadelphia: F. H. Davis Co., 1912, Pp. V-614.

The writer of this timely volume has had six years of experience as medical inspector in the public schools during which time he has examined some 55,000 children. He defines his aim as that of presenting "a practical exposition of the work" of medical inspection and to give to physicians and teachers a survey of medical practice as it relates to children of school age." This exposition is given in three sections, (1) medical inspection, (2) hygiene, and (3) defects and diseases, two-thirds of the book being devoted to the last section. The object of medical inspection is outlined as follows: "(1) Detection and correction of physical defects. (2) Detection and exclusion of cases of parasitic and contagious disease. (3) Maintenance of good hygienic conditions. (4) Diagnosis and treatment of mental deficiency. (5) Correlation of medicine and pedagogy in order to produce the maximum of efficiency in the school system consistent with the preservation of health." The efficiency of medical inspection depends on a variety of things among which the qualifications of the inspector is only one. Of the things inspector
 rage physician is poorly equipped to do

medical inspection." He needs a special medical training and experience in the work. A study of the results of different inspectors in the Brooklyn schools showed that the inspectors varied from eighteen to one hundred per cent as regards the number of the children needing treatment. Besides this, his success will depend on the co-operation of the school authorities and teachers, the employment of home visitors, nurses, free dispensaries, and on matters of organization of the work. A detailed description and discussion of the procedure in the actual work of medical inspection, taking up the different physical defects, diseases, organs and tissues, and mental deficiency follow. Nearly two hundred illustrations consisting of pictures, tables, curves, and numerous blanks and other illustrative material make the presentation concrete throughout. This is too detailed to review here. But we may note his discussion on mental deficiency. Mentally deficient children are defined as those "who are 'incapable of doing ordinary school work under fair conditions,' and are divided into three groups: (1) Dull: (2) Border-land (real or apparent): (3) Feeble-minded. These classes are defined further. "Dull children are those who fail to do ordinary school work satisfactorily, but who are, nevertheless, normally intelligent in everyday words and action, and are not markedly peculiar." Most of these are permanently dull, a few become brilliant. "Border-land cases (Backward children) are those so deficient intellectually that doubt exists whether to classify them as normal or feeble-minded." Psychologists and eugenists, who draw the line more closely, usually classify them as feeble-minded, while the ordinary observer and the average justice of the peace do not. "Feeble-minded persons are those with incurable mental deficiency of pronounced degree originating previous to adolescence, the intellectual development varying from zero to a scholastic ability to do fourth-grade work after unlimited teaching."

Special forms and grades of feeble-minded are discussed further. On the question of diagnosis of mental deficiency it is observed that "the only absolute evidence of mental deficiency is the expression of the child's thoughts by his words and actions." This is the direct evidence, but there is much indirect evidence, on which the author evidently lays much stress. This is as follows: "Indirect evidence (simply suggestive or corroborative) (1) bad heredity; (2) ill health (poor nutrition, anemia); (3) unfavorable environment; (4) physical defects of mild degree; (5) moderate retardation in school; (6) numerous physical defects indicating a generally faulty make-up. Semi-direct evidence (very suggestive or corroborative), (1) severe defects of sight or hearing; (2) organic brain disease; (3) marked retardation in physical and mental development during infancy (parents' statement): (4) marked retardation in school without good cause; (5) lack of emotional control; (6) defective neuro-muscular tone; (7) defective co-ordination."

Under the direct evidence is included, (1) "The child's school record; (2) systematic tests of the various mental processes; (3) tests of mental development (graded according to age) with more or less attempt at mind analysis." Several special mental tests are described, similar to many found

in psychological literature, but he does not give any data indicating the degree of correlation of their results with mental development. The Binet-Simon tests are given and criticized. The results with them give evidence of mental development but do not alone make a diagnosis. In fact, "a diagnosis, based entirely on the direct evidence, without a thought of ancestry, malnutrition, adenoids, home illiteracy, or foreign parentage, is unscientific and often wrong." The valuable features of the Binet-Simon tests are summarized in the following: "(1) They furnish a handy, quick, and fairly accurate method of testing a child's mentality; (2) they are serviceable to the ordinary grade teacher, the physician in general practice, and the parent, as they are simple and easily applied. The argumentative and doubting parent is quickly convinced when the child is tested according to an impersonal system, furnishing normal standards for each age; (3) from the third to the eighth years they not only present evidence, but go far towards making an immediate diagnosis; (4) after the eighth year they do not make a diagnosis because the variation within normal limits becomes too great, but they do present a good record of the child's present mentality." That the tests alone possess any superior merits over other means of diagnosis seems, however, not to be granted. For we read a little later that, "No special examiner who is honest claims anything more than a sound skill and judgment born of experience." A discussion of the results of mental deficiency, and the education and care of the mentally deficient closes this chapter. Next and finally are considered anomalies of the skeleton, nutrition, the skin, speech, infectious diseases, and prevalence of defects and diseases.

The book reflects throughout the extensive experience of the author in medical inspection, and it proceeds along concrete and practical lines. No medical inspector in the schools can afford to be without it. Necessarily, in a field so new, it is constructive and will, for this reason, undoubtedly arouse dissention on some points. The reviewer, for instance, would limit the scope of the medical inspector's duties to a much narrower range than the author does. If the work is properly organized, a condition which the medical inspector, however, rarely meets at the present time, he should be concerned with nothing but diagnosis and medical prescription. Further, if "the average physician is poorly equipped to do medical inspection" and needs a special training and experience, he is much more poorly equipped to make a mental diagnosis. Diagnosis of mental development had better be left to psychologists, at least if psychological methods are to be used. There is much material in the book which might have been omitted if the duties of the medical inspector had been more limited. This concerns largely matters of organization and administration, and especially the hundred pages on mental deficiency, including the discussion on their care and training. Perhaps also a different arrangement of the material might have avoided the necessity of discussing some of the same topics in each of the three sections of the book, thus giving a more orderly and compact presentation.

Faribault, Minnesota.

F. KUHLMANN.

The Kallikak Family. A Study in the Heredity of Feeble-Mindedness. H. H. GODDARD, Ph. D. The Macmillan Co.

This is a book that should be studied by every adult who is interested in eugenics, and who is not? It is the story of two families descending from one man. One was the result of mating illicitly with a moron of high grade; and one was the result of a marriage with a woman of sound stock. The man known in the study as Martin Kallikak Sr., (a fictitious name) was himself descended from good stock. By his lapse from virtue, there came into being a son to whom the deserted mother gave the name of the father, and who is known in the study as Martin Kallikak Jr.

This son was the progenitor of a race of inefficients and of vicious people. His descendants in direct line number 480. Of these, 143 were feeble-minded, and only 46 known positively to be normal. The mental status of the rest is either unknown or doubtful. "Among these four hundred and eighty descendants, thirty-six have been illegitimate.

There have been thirty-three sexually immoral persons, mostly prostitutes.

There have been twenty-four confirmed alcoholics.

There have been three epileptics.

Eighty-two died in infancy.

Three were criminals.

Eight kept houses of illfame."

By marriage into other families there are known to the study and charted, a total of 1,146 related individuals, among whom there were 119 known to be feeble-minded in addition to the 143 in direct line.

On the other side, from the marriage with a woman of good family, there has descended in direct line, 496 people. In the whole number there were no mental defectives, only one insane (and that a case of religiosity, probably inherited from marriage into another family). Only three were in any sense degenerate, two of these being alcoholic, and one sexually immoral. This is a line of doctors, judges, educators, traders, land owners, in short respectable citizens, men and women prominent in every phase of social life. There were no epileptics, no illegitimate children, no immoral women and no criminals.

The pursuit of this study was favored by a chain of circumstances that enabled the field workers to secure unusually reliable and complete data. The parallelism of two descents from one common ancestor, makes the study one of the most enlightening and instructive contributions to heredity that has ever been made. The illustrations showing the housing conditions of some of the "bad" side, serve a good purpose in impressing upon the reader the nature of the usual environmental conditions in such cases, and into which such people always gravitate, and in which they always remain unless the stock is rehabilitated by the influx of better blood.

The photo of the young descendant from which the study started, and